Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use in Mid-Band Spectrum	)	GN Docket No. 17-183
Between 3.7 and 24 GHz	)	

To: The Commission

COMMENTS OF
AMERICAN ASSOCIATION OF STATE
HIGHWAY & TRANSPORTATION OFFICIALS

Date: October 2nd, 2017

SUMMARY

AASHTO has general concerns about sharing the 5.925 – 7.125 GHz bands, and suggests a thorough examination of incumbent licensee technical diversity.

COMMENTS OF
AMERICAN ASSOCIATION OF STATE
HIGHWAY & TRANSPORTATION OFFICIALS

The American Association of State Highway & Transportation Officials, Inc. ("AASHTO") pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. §1.415, hereby respectfully submits its comments in response to the Notice of Inquiry in the above-captioned proceeding.

I. BACKGROUND

A. The American Association of State Highway & Transportation Officials

AASHTO, formed in 1914 as an association with 27 members, brings together each state and territory's bureau, department, or administration agency responsible for the building and maintenance of roads and highways. Since the association's founding its membership has increased to include all 50 states, the District of Columbia and the Commonwealth of Puerto Rico providing a national and international voice for all five modes of transportation, law enforcement, fire and emergency medical services, local, county, tribal, and state governments. AASHTO is designated by the Federal Communications Commission as the only agency authorized to recommend or approve applications for radio frequencies in the Public Safety Highway Maintenance Pool. This authorization was subsequently extended to include all frequencies assigned to the Public Safety Frequency Pool and the SMR 800 MHz pool being vacated by Sprint-Nextel. Its members are licensed in or share licenses in both the 5.925 - 6.425 GHz and 6.425 – 7.125 GHz bands, and it performs frequency coordination services for Part 101 applicants.

AASHTO is internationally recognized for its pioneering work in providing for the safety of the millions of travelers using highways, trains, ferries, airports and public transit systems daily. AASHTO develops recognized standards for the design and operation of roads, rail systems, ports and waterways, airport facilities and transit systems with the sole intent of protecting the traveling public. In its role of representing state departments of transportation, AASHTO directly supports and integrates with the police, fire and medical services operated by its members for the protection of life, health and property of those using the nation's multiple transportation systems. AASHTO is a founding member of the National Public Safety Telecommunications Council ("NPSTC") and an initial member of the Public Safety Spectrum Trust Corporation ("PSST"), holders of the nationwide public safety broadband network license. AASHTO has been selected to serve as a member of the Emergency Response Interoperability Center's Public Safety Advisory Committee ("ERIC PSAC"). AASHTO works with the other Frequency Advisory Committees ("FACs") on the Land Mobile Communications Council ("LMCC") and the Public Safety Communications Council ("PSCC") in setting policy and procedures for coordinating and assigning radio frequencies under Part 90 of the Commission's Rules.

II. DISCUSSION

With respect to the 5.925-6.425 GHZ and 6.425 – 7/125 GHz bands, AASHTO's members have similar concerns. The Notice of Inquiry asks:

> "If the Commission allowed unlicensed use in the 5.925-6.425 GHz band, would it be feasible for the Commission to adopt techniques to mitigate the risk of interference from unlicensed devices to licensed services? For example, could we limit the unlicensed devices to operate at a lower power than has traditionally been permitted by our rules, restrict the types of antennas permitted, limit the EIRP toward the geostationary arc, allow only indoor use, or require the devices to have a geo-location capability and means to access a database to determine whether they may transmit?"

There may be techniques that could mitigate interference. Low power indoor use, such as that available to Part 15 devices, would have little likelihood for interference potential to the Part 101 services AASHTO's members use. As soon as outdoor use is allowed however, there are concerns over and rise in the noise floor. As microwave engineers know well, fade margins of up to 30 dB aren't something which can be causally reduced: there are already cases where Automatic Power Control up to the fully licensed EIRP cannot compensate for atmospheric disturbances resulting in temporary outages in critical Public-Safety backhaul paths.

The NOI also asks:

> "We also note that 350 megahertz of the 6.425-7.125 GHz band is allocated for mobile. We seek comment on whether, these factors could make it easier—relative to other frequency bands —for new FS or mobile operators to coordinate and share the 6.425-7.075 GHz band with incumbent operators."

To this broad question, AASHTO sees "no" as a clear answer. For example, The Minnesota Department of Transportation, licensed in the **only** available Public Safety mobile microwave band under call signs WQFA942, -945 and WQFH200, employs its four 25 MHz mobile channels for air-to-ground data communications, as do many other Public Safety organizations. Since the transceivers are mobile, in practically all cases the paths, though time, are operating at and below the noise floor, unlike fixed links. While bit errors must therefore be tolerated, *any* increase in noise by unlicensed users would have a direct effect on the reliability of such systems which could not be mitigated except by preventing any use of such devices in a very wide buffer area around mobile Part 101 licenses. This is but one example of unusual use cases by its members which suggest a careful examination of current radio path requirements before sharing can be attempted.

III. CONCLUSION

At this time, AASHTO recommends that no action be taken on allowing unlicensed devices, whether constrained by area or power, to operate in the 5.925 – 7.125 GHz bands. Rather, AASHTO recommends that the FCC assemble an advisory panel comprised of the appropriate stakeholders, to identify the best candidate sharing scenarios. The FCC could then request that the potential product manufacturers, who will benefit from the sale of future equipment, undertake coordinated studies to simulate, test, demonstrate, and ultimately give guidance on which candidate sharing scenarios will provide the requisite protection for present *and future* licensees, carefully bearing in mind the quite varied uses currently licensed. Such studies should be open and subject to critical review by the advisory panel and other interested parties. After the studies, and a subsequent report on the results by the advisory panel, the FCC should have the necessary information to issue a Notice of Proposed Rulemaking on how best to mitigate the technical challenges associated with sharing the bands.

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

AMERICAN ASSOCIATION OF
STATE HIGHWAY &
TRANSPORTATION OFFICIALS

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